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Nearly all the valleys which combine to form the basin of Lake Lahontan are due to profound fractures, the displacements in numerous instances extending 4000 or 5000 feet. These movements are thought to be still in progress, the mountains throughout the Great basin either slowly rising or sinking. "As a matter of observation we find the evidence of recent faulting best defined along the bases of the highest of the ranges, indicating that these owe their distinction to the fact that they are still growing."

An important contribution to glacial geology is Thos. C. Chamberlin's preliminary account of the terminal moraine of the second geological epoch, illustrated by excellent maps and views. This second great terminal moraine marks a general advance of the great ice-sheet at a date considerably later than the stage of greatest glaciation. The great terminal moraines of the first glacial epoch have been traced from Cape Cod to Ohio and Illinois, but in the interior of the continent this "supposed extreme outer moraine has not been traced out." The author believes that the western portion of what was supposed to be the great terminal moraine of the first epoch is, in Michigan, Wisconsin, Minnesota and Iowa, a part of the later moraine.

HYATT ON THE GENERA OF FOSSIL CEPHALOPODS.—This is an elaborate discussion of the character and relations of the genera of fossil Cephalopods, the results of many years' patient study. It appears in the Proceedings of the Boston Society of Natural History, and is preliminary to a monograph which will appear in the Memoirs of the Museum of Comparative Zoölogy, at Cambridge, Mass.

Univalve shells, the author remarks, may be generally spoken of as cones, which may be either straight, curved or coiled. The larger number of the more ancient shelled cephalopods are straight cones. The young of nautilian shells are identical with the adults of the curved (arcuate) and coiled (gyroceran) and in different series repeat their forms, sutures, shell markings and the outlines of their whorl in transverse section. "They are in succession first arcuate, then gyroceran, and lastly nautilian or close-coiled. In several series genetic lines of adult forms may be followed, which lead by gradation from arcuate, cyrtoceran forms to close-coiled nautilian shells, the whole showing a connected series of transitions in the form and outline of section, sutures, structure and position of siphon, and shell ornaments and apertures. In some cases these graded series are in accord with the chronological record, the straight appearing first, the arcuate either in company with them or later in time, and the gyroceran and nautilian latest."

The author adds that we cannot of course claim that such perfect evidence has been found even in the larger number of series.

"In some of them, certainly, it is not an over-statement to say that the chronology of the evolution of form, the development of the individual, the gradations in the adults and the general differential characteristics all tell the same story, and are decisive for the opinion that in all the larger series of shell-bearing Cephalopoda, the nautilian shells belong to several distinct series and arose independently from straight cones through the intermedium of a graded series of arcuate and gyroceran or closely coiled forms. The generic terms, *Cyrtoceras*, *Gyroceras* and *Nautilus* are really only descriptive terms for the different stages in the development of an individual, and also the different stages in the development or evolution of the series of adult forms in time. In other words, each of these genera as now used, include representatives of all the different genetic series of Tetrabranchs, which are either young shells in the corresponding stage of growth, or adult shells in the corresponding stage of evolution."

Professor Hyatt maintains that the Nautilini were derived directly and independently from a straight cone, and that this primitive nautiline form was a close ally and ancestor of the straight orthoceran-like *Bactrites* of the Silurian. "All the remaining ammonoids are more concentrated in development, and skip the orthoceran, cyrtoceran and gyroceran stages of their evolution in time. They are evidently descendants of the close-coiled Nautilinidæ, and the evidence here is very strong that the whole order of Ammonoidea arose from a single organic center of distribution, the Nautilini of the Silurian. The succession in time, the evidence of gradation in structure and the development exactly accord with this statement. Nautilinidæ, Goniatites, Triassic transition forms of Ammonitinæ and the true Ammonites of the Jura form a perfect progressive series."

During the investigation Professor Hyatt has been able to add to the facts he has already brought forward in support of the law of acceleration, though he now prefers to designate it as "the law of concentration of development." All the more generalized or lower types, he says, have a direct mode of development, and the more specialized or complicated progressive types have, when at the acme of their development, a more indirect mode of development." The types which are descended from these last have often a mode of development which in many forms is an apparent return to the direct mode of development again."

It is impossible to farther epitomize this important paper, and we shall look forward with much interest to the complete illustrated memoir.

PARKER'S ZOÖTOMY.¹—Undoubtedly a knowledge of animal morphology, or what used to be called comparative anatomy, lies at

¹*A course of Instruction in Zoötony (Vertebrata)*. By T. JEFFEREY PARKER. With 74 illustrations. London, Macmillan & Co., 1884. 12mo, pp. 397. \$2.25.